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WSBW B.E. Notebook

United States Department of Agriculture
Forest Service
Region 3
517 Gold Avenue, SW
Albuquerque, NM 87102

Reply To: 3420 Pest Management Evaluations

Date: JAN 09 1985

Subject: 1984 Western Spruce Budworm

To: Forest Supervisor, Lincoln NF

During August 1984, Forest Pest Management personnel conducted surveys on the Lincoln National Forest (LNF), Mescalero Apache Indian Reservation (MAIR), and interspersed private lands to monitor the status of the current western spruce budworm (WSBW) population. These surveys included aerial sketch mapping to delineate extent and intensity of 1984 defoliation, and egg mass collections[1] as an aid in predicting 1985 defoliation levels. Location of aerially detected defoliation and egg mass plots are shown in figures 1 and 2 (enclosed).

The purpose of this letter is to summarize the results of these surveys and to present recommendations concerning WSBW management on the LNF, MAIR, and interspersed private lands in 1985. Results are presented by analysis units (as established during the environmental assessment of WSBW on the LNF, MAIR, and associated State and private lands, 1983) and summarized in tables 1 and 2 (enclosed).

Carrizo and Capitan Analysis Units. Defoliation increased from 1,850 acres in 1983 to 2,325 acres in 1984 on the Carrizo unit and decreased from 1,200 acres in 1983 to 0 acres in 1984 on the Capitan unit. Because the host type on these units is small, isolated, and primarily in wilderness or noncommercial areas, no egg mass surveys were conducted. Continued light defoliation in both units is expected in 1985.

White Mountain Analysis Unit. Defoliation and density of new egg masses decreased within the White Mountain analysis unit, indicating a reduction in the WSBW population. However, egg mass densities are still sufficiently high at the two areas sampled to predict light to moderate defoliation in 1985.

[1] Egg mass survey methods have been described by Telfer, W. G. 1983. Biological evaluation, western spruce budworm, Lincoln National Forest and Mescalero Apache Indian Reservation, New Mexico. USDA Forest Serv., Southwestern Reg. R-3 84-3. 22 p.

Sierra Blanca Analysis Unit. Defoliation decreased on the Sierra Blanca unit from 11, 975 acres in 1983 to 6,300 acres in 1984. Only one area was surveyed for egg mass densities in this unit. That area, near the Ruidoso Canyon Picnic Area, showed a very high density of egg masses (44.3 per square meter of foliage), leading to our prediction of moderate to heavy defoliation in portions of this unit in 1985.

Ruidoso Analysis Unit. Defoliation was recorded on 700 acres of this unit in 1984, down from 3,625 acres in 1983. Egg mass densities for the two areas sampled averaged 1.0 ± 1.0 per square meter of foliage. We predict undectable to light defoliation in this unit for 1985.

Mescalero, Cloudcroft, Alamo, and Sacramento Analysis Units. Most of the host type (240,900 acres) within these four units was treated by aerial application of insecticides in late May and early June 1984 to suppress the WSBW infestation. Preliminary results (see our 3440 letter dated July 2, 1984) indicate treatment was successful in reducing the larval population to acceptable levels. Aerial surveys showed total acres defoliated decreased from 1983 to 1984 on the Mescalero unit, but increased on the Cloudcroft, Alamo, and Sacramento units. While the total area defoliated on these three units increased, the intensity of defoliation was weighted toward the light category. Since posttreatment larval and egg mass samples taken within these units showed a low residual WSBW population, we conclude most of the observed defoliation occured prior to treatment.

Egg mass densities dropped considerably within these units from 1983 to 1984, with the average in each unit less than 1.5 per square meter of foliage. These relatively low densities indicate defoliation levels in 1985 will vary from undetectable to light.

Recommendations. We recommend no suppression action on any analysis unit during 1985. WSBW population levels appear at low levels within the Mescalero, Cloudcroft, Alamo, and Sacramento analysis units. The remaining analysis units contain isolated host type located primarily in wilderness or other noncommercial designations. We will continue to monitor the WSBW population within these units in 1985 and inform you of any changes.

for DOUGLAS L. PARKER
Director of Forest Pest Management

Enclosures (4)

cc:
TM (w/encls.)
WO (w/encls.)
RM (w/encls.)
BIA, Albuquerque (w/encls.)
State Forester, NM (w/encls.)
NMDA, Las Cruces (w/encls.)

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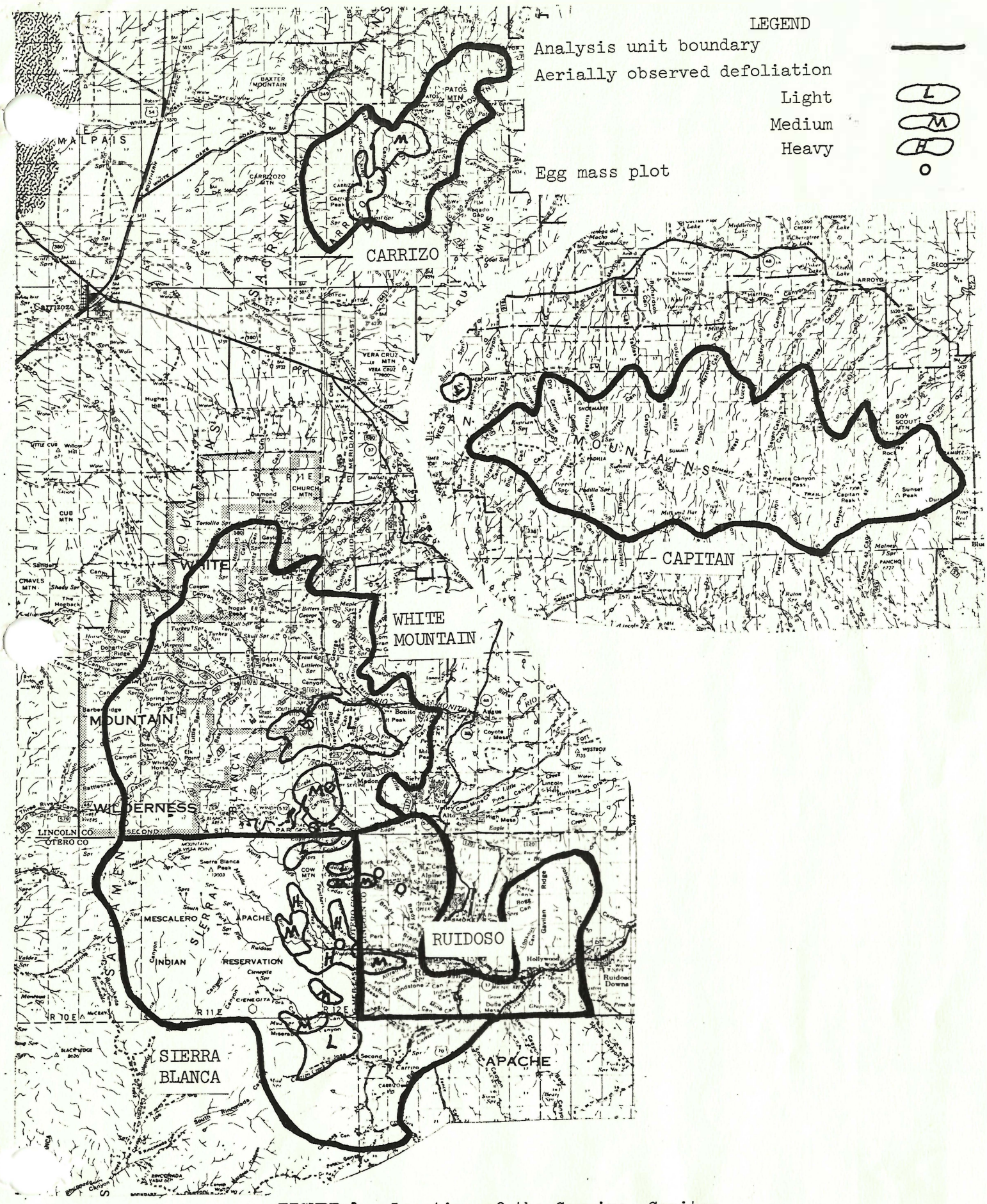

FIGURE 1.--Location of the Carrizo, Capitan, White Mountain, Sierra Blanca, and Ruidoso analysis units; 1984 aerially observed defoliation; and 1984 egg mass plots

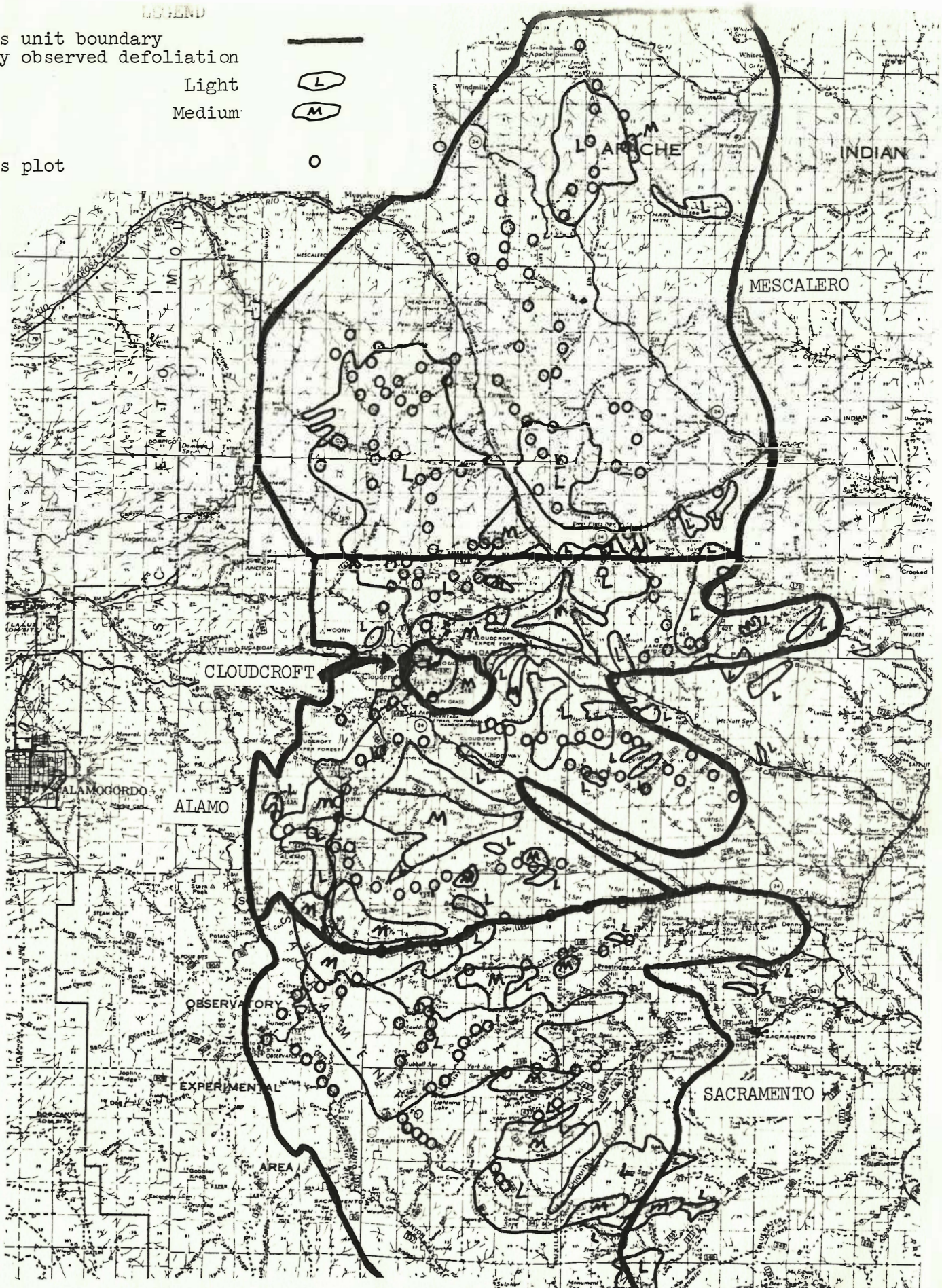

FIGURE 2.--Location of the Mescalero, Cloudcroft, Alamo, and Sacramento analysis units; 1984 aerially observed defoliation; and 1984 egg mass plots

TABLE 1.--Summary and comparison of defoliation as determined by aerial surveys in 1983 and 1984 per analysis unit, Lincoln National Forest

Analysis unit	Acres defoliated								Trend
	1983				1984				
	Light	Medium	Heavy	Total	Light	Medium	Heavy	Total	
Carrizo	1,850	0	0	1,850	1,025	1,300	0	2,325	Static
Capitan	1,200	0	0	1,200	0	0	0	0	Decreasing
White Mountain	5,225	975	0	6,200	3,250	1,425	0	4,675	Decreasing
Sierra Blanca	4,400	7,575	0	11,975	2,575	1,550	2,175	6,300	Decreasing
Ruidoso	3,600	25	0	3,625	0	700	0	700	Decreasing
Mescalero	13,325	30,675	950	44,950	27,400	1,375	0	28,775	Decreasing
Cloudcroft	1,675	300	0	1,975	650	1,650	0	2,300	Static
Alamo	9,825	11,175	0	21,000	23,525	10,850	0	34,375	Increasing
Sacramento	12,550	3,475	0	16,025	20,675	5,775	0	26,450	Increasing
Total	53,650	54,200	950	108,800	79,100	24,625	2,175	105,900	Static

TABLE 2.--Summary and comparison of 1983 and 1984 egg mass densities, and predicted defoliation for 1985, by analysis unit, Lincoln National Forest

Analysis unit	New egg masses per square meter foliage + SE and number of plots		Predicted defoliation for 1985
	1983	1984	
Carrizo	No data collected	No data collected	Undetermined
Capitan	No data collected	No data collected	Undetermined
White Mountain	82.2 ± 41.2 n = 4	8.6 ± 4.2 n = 2	Light to moderate
Sierra Blanca	45.6 ± 9.9 n = 10	44.3 -- n = 1	Undetermined
Ruidoso	No data collected	1.0 ± 1.0 n = 2	Undetectable to light
Mescalero	37.6 ± 10.7 n = 16	1.1 ± .53 n = 73	Undetectable to light
Cloudcroft	49.2 ± 7.2 n = 10	.7 ± .7 n = 3	Undetectable to light
Alamo	59.0 ± 12.3 n = 10	.5 ± .16 n = 76	Undetectable to light
Sacramento	46.0 ± 8.7 n = 6	.9 ± .37 n = 48	Undetectable to light